

ABSTRACT OF THE DISCLOSURE

A CVD process for producing nanocrystalline films using a plasma (56, 312) created by an argon atmosphere (at least about 90 percent by volume) containing methane (preferably about at least about 1% by volume) and optionally hydrogen (preferably 0.001 to 2% by volume) is described. Strictly controlled gas purity and an apparatus which excludes oxygen and nitrogen from being introduced from outside of the chamber (40, 305) are used. The films are coated on various substrates to provide seals, optical applications such as on lenses and as a substrate material for surface acoustic wave (SAW) devices.

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